PITH NECROSIS VS BACTERIAL CANKER: A TALE OF TWO TOMATO DISEASES
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Dan Egel & Scott Monroe - We recently observed a tomato sample with tomato pith necrosis. Since this disease can be confused with bacterial canker, this article is a comparison of the two diseases.

Introduction. Tomato pith necrosis is not common in Indiana. It is usually reported only once or twice during a season. Almost always, pith necrosis is observed in a greenhouse or high tunnel situation. Pith necrosis rarely causes significant loses.

Bacterial canker is relatively common in Indiana. It may occur in field, greenhouse or high tunnel situations. Bacterial canker is one of the most serious of the tomato diseases that occur in Indiana.

Symptoms. Tomato pith necrosis causes vines to assume a twisted appearance. Stems may also turn dark (see Figure 1). If the stems are cut open, the inside may be rotten, giving the disease its name. Usually only a few plants in a greenhouse become symptomatic; often plants seem to ‘grow out of’ the disease symptoms.

The first symptom of bacterial canker is often the brown and yellow edges (marginal necrosis and chlorosis) observed on leaves (see Figure 2). This symptom is sometimes known as ‘firing’. Use a knife to cut open the lower stem of a plant tomato plant affected by bacterial canker; the interior is often discolored brown. Fruit occasionally have a symptom known as a bird’s eye lesion. Bacterial canker symptoms can be very severe, in some cases resulting in complete loss of yield.
**Biology.** Low night temperatures, high nitrogen levels and high humidity favor tomato pith necrosis. It is not clear how the causal bacterium survives or enters the tomato plant.

The bacterium that causes bacterial canker may be seed-borne or may survive in crop debris. Temperatures of 75 to 90°F favor the disease; wet, rainy conditions help bacterial canker to become established. Once inside the plant, the bacteria may become systemic so that the disease may spread within a plant without additional moisture.

**Management.** To manage tomato pith necrosis, avoid low night temperatures and excessive nitrogen levels; reduce high humidity in the greenhouse or high tunnel.

Whenever possible, avoid planting seed that is contaminated with the bacterium that causes bacterial canker. Inspect transplants for symptoms of disease before planting. Applications of a copper or streptomycin product in the transplant greenhouse may reduce disease severity. Be sure to check the label for greenhouse use, re-entry interval, etc. However, once the bacteria become systemic, these products will not be useful. Crop rotation and sanitation will help reduce the disease problem.

For more information, consult the *Midwest Vegetable Production Guide for Commercial Growers* (ID-56) available in hard copy from the Education Store the-education-store.com ($10) or online at mwveguide.org. See the article about disease management in greenhouses and high tunnels in Issue No. 564 of the *Vegetable Crops Hotline*. Always check the pesticide label prior to use.